

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 17 NOV 2005

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Applicant's or agent's file reference	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP2004/010324	International filing date (day/month/year) 13.09.2004	Priority date (day/month/year) 04.10.2003
International Patent Classification (IPC) or both national classification and IPC C11D3/16, C11D3/50, C11D3/39		
Applicant UNILEVER PLC et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

I ☒ Basis of the opinion

II ☐ Priority

III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

IV ☐ Lack of unity of invention

V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

VI ☐ Certain documents cited

VII ☐ Certain defects in the international application

VIII ☐ Certain observations on the international application

Date of submission of the demand 23.03.2005	Date of completion of this report 16.11.2005
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 </div> </div>	Authorized Officer Pfannenstein, H Telephone No. +49 89 2399-8217



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP2004/010324

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-25 as originally filed

Claims, Numbers

1-5 filed with telefax on 25.08.2005

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP2004/010324**

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-5
	No: Claims	
Inventive step (IS)	Yes: Claims	1-5
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-5
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

- 1) The following document is referred to in this communication:

D1 WO-A-9738074

D2 US-A-20030022805

D3 WO-A-0248301.

- 2) D1 (examples 11-12) exemplifies aqueous liquid laundry detergent compositions having a pH of 10 comprising a buffer, an air bleach catalyst and ethyl benzaldehyde which is regarded as a perfume. Claim 1 differs from D1 in that the selected perfumes are different. Thus, the subject-matter of claims 1 and 5 is novel.

D2 (example II) exemplifies granular laundry detergent compositions comprising an air bleach catalyst including complex forming ligands, 0,7% AvO perborate (corresponds to about 6,6%), 0,5% dibenzoyl peroxide and perfumes including Verdox, citronellyl acetate, damascone, undecavertol, limonene, geraniol, iso E super, hexylcinnamic aldehyde; tetrahydrolinalol, linalool. Claim 1 differs from D2 in that in claim 1 the composition is liquid and the amount of peroxide is lower, less than 1%. Thus, the subject-matter of claims 1 and 5 is novel.

- 3) The application relates to liquid storage stable bleaching compositions devoid of peroxy species using comprising an air bleach catalyst and selected perfume components. An effect has been shown for a list of perfume components.

D1 relates to a process for cleaning a substrate by activating molecular oxygen from air using benzaldehyde compounds. Transition metal bleach catalysts may be added to improve the bleaching performance. D1 does not disclose storage stability.

D2 relates to diacyl peroxide and a blooming perfume to provide good cleaning and stain removal while providing a positive scent signal. Transition metal bleach catalysts are optional. Storage stability is also not disclosed.

D3 describes air bleach transition metal bleach catalysts but no perfume. Storage stability is also not disclosed.

Thus, the subject-matter of claims 1 and 5 is inventive.

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We claim:

1. A liquid bleaching composition having a pH of 10 or below comprising:

(a) a transition metal air bleaching catalyst, wherein the bleaching composition comprises less than 1 % wt/wt total concentration of peracid or hydrogen peroxide or source thereof;

(b) between 0.001 to 3 wt/wt % of a perfume composition wherein and the perfume comprises a perfume component selected from the group consisting of: Alpha demascone, Delta demascone, Iso E super, Cinnamic aldehyde, Hexylcinnamic aldehyde, Aldehyde butylcinnamic, anisique aldehyde, Linalol, Tetrahydrolinalol, Undecavertol, Geraniol, Nerol, Citronellol, citral, Oxyde de Rose, Geranyl acetate, Citronellyl acetate, Coumarine, Linalyl acetate, Geranyl nitrate, Citronellyl nitrile, Cinnamonitrile, and Citronitrile, Aldehyde Amylcinnamique, Methylanthranilate, di-ethyl-Anthranilate, Methyl-n-Acetylanthranilate, Diphenyloxide, Verdox, Benzylacetate, Diola, Orange Cristals, Peonile, Clonal, Limonene, Camphor, Anthranilate, Di-isobutyl-Anthranilate, Verdyl Acetate, pinane, veloutone, alpha-methylionone, and damascenone; and,

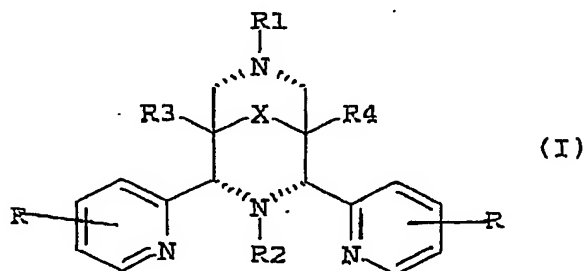
(c) the balance carriers and adjunct ingredients to 100 wt/wt % of the total bleaching composition,

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wherein the bleaching activity of the liquid
bleaching composition is greater by a factor of at
least 10, in comparison to a same bleaching
composition in which a molar equivalent amount of
citronellal is present as the perfume composition,
after a period of storage at 37 °C for 14 days as
measured by exhibited bleaching activity of the
transition metal catalyst towards acid blue 45 in
the presence of hydrogen peroxide or as measured by
exhibited bleaching activity of the transition metal
catalyst towards beta-carotene in absence of peroxy
species.

2. A bleaching composition according to claim 1,
comprising between 0.05 to 2 wt/wt % of a perfume
composition.
3. A liquid bleaching composition according to claim 1
or 2, wherein the liquid bleaching composition has a
pH in the range of 6 to 9.
4. A bleaching composition according to any preceding
claim, wherein the air bleaching catalyst is an
Fe(II)-(III)-(IV)-(V) transition metal complex of a
monomer having the formula (I):



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wherein each R is independently selected from:

hydrogen, F, Cl, Br, hydroxyl, C1-C4-alkylO-, -NH-CO-H, -NH-CO-C1-C4-alkyl, -NH₂, -NH-C1-C4-alkyl, and
5 C1-C4-alkyl;

R1 and R2 are independently selected from:

C1-C4-alkyl,

C6-C10-aryl, and,

a group containing a heteroatom capable of

10 coordinating to a transition metal, wherein at least one of R1 and R2 is the group containing the heteroatom;

R3 and R4 are independently selected from hydrogen,

C1-C8 alkyl, C1-C8-alkyl-O-C1-C8-alkyl, C1-C8-alkyl-

15 O-C6-C10-aryl, C6-C10-aryl, C1-C8-hydroxyalkyl, and

-(CH₂)_nC(O)OR₅

wherein R₅ is independently selected from: hydrogen, C1-C4-alkyl, n is from 0 to 4, and mixtures thereof; and,

20 X is selected from C=O, -[C(R₆)₂]_Y- wherein Y is from 0 to 3 each R₆ is independently selected from hydrogen, hydroxyl, C1-C4-alkoxy and C1-C4-alkyl.

5. A method of bleaching a textile stain, comprising
25 the steps of treating a substrate with the bleaching composition as defined in any preceding claim in an aqueous environment, rinsing the substrate and drying the substrate.

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